

RESERVOIR AND SPILLWAY DATA SHEET*

<p>Landowner _____ Computed By: _____ Date _____ Checked By: _____</p> <p>Drainage Area _____ ac. Average Watershed Land Slope, Y = _____ % Flow Length, ℓ = _____ ft. Auxiliary Spillway Condition (Check One): Good _____ Fair _____ Poor _____</p> <table style="width: 100%; border: none;"> <tr> <td></td> <td style="text-align: center;"><u>Principal Spillway</u></td> <td style="text-align: center;"><u>Auxiliary Spillway</u></td> </tr> <tr> <td>Frequency</td> <td style="text-align: center;">_____ yr.</td> <td style="text-align: center;">_____ yr.</td> </tr> <tr> <td>24-Hr. Rainfall</td> <td style="text-align: center;">_____ in.</td> <td style="text-align: center;">_____ in.</td> </tr> <tr> <td>(MO-2-1-to7, EFH)</td> <td></td> <td></td> </tr> <tr> <td>Runoff Curve No.</td> <td colspan="2" style="text-align: center;">_____</td> </tr> <tr> <td>(From reverse side)</td> <td></td> <td></td> </tr> <tr> <td>Watershed Runoff (V_r)</td> <td style="text-align: center;">_____ in.</td> <td style="text-align: center;">_____ in.</td> </tr> <tr> <td>(MO-2-11 to 24, EFH)</td> <td></td> <td></td> </tr> <tr> <td>Q_i (Chapt. 2, EFH)</td> <td colspan="2" style="text-align: center;">_____ cfs</td> </tr> </table>		<u>Principal Spillway</u>	<u>Auxiliary Spillway</u>	Frequency	_____ yr.	_____ yr.	24-Hr. Rainfall	_____ in.	_____ in.	(MO-2-1-to7, EFH)			Runoff Curve No.	_____		(From reverse side)			Watershed Runoff (V_r)	_____ in.	_____ in.	(MO-2-11 to 24, EFH)			Q_i (Chapt. 2, EFH)	_____ cfs		<p style="text-align: center;"><u>AUXILIARY SPILLWAY DESIGN</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;">Auxiliary Spillway Elevation _____</td> </tr> <tr> <td colspan="3">Auxiliary Spillway Flow Depth, H_p (Check One):</td> </tr> <tr> <td style="text-align: center;">H_p (ft.)</td> <td style="text-align: center;">Q_a (cfs/ft.)</td> <td style="text-align: center;">Max. Exit Slope (%)</td> </tr> <tr> <td style="text-align: center;">_____ 1.0</td> <td style="text-align: center;">_____ 2</td> <td style="text-align: center;">_____ 12</td> </tr> <tr> <td style="text-align: center;">_____ 1.3</td> <td style="text-align: center;">_____ 3</td> <td style="text-align: center;">_____ 10</td> </tr> <tr> <td style="text-align: center;">_____ 1.5</td> <td style="text-align: center;">_____ 4</td> <td style="text-align: center;">_____ 6</td> </tr> </table> <p>Auxiliary Spillway Elev. + H_p _____ V_{sa} (From reverse side) _____ ac.ft. V_{ra} = Aux. Runoff 3 D.A. \div 12 _____ ac.ft. $V_{sa} + V_{ra}$ _____ Q_0/Q_i Factor (MO-11-4, EFM) _____ $Q_0 = Q_0/Q_i$ Factor $\times Q_i$ _____ cfs $Q_{0a} = Q_0 - Q_{0p}$ _____ cfs ($Q_{0a} = Q_0$ for pipes <10" Dia.)</p> <div style="border: 1px solid black; padding: 5px;"> <p><i>Bottom Width</i> = $\frac{Q_{0a}}{q_a} =$ _____ <i>Use</i> _____ <i>ft.</i> Exit Slope: Min. _____ 1% _____; Max. _____ % <i>Settled Fill Elev. = Aux. Spwy. Elev.</i> <i>+ H_p + 1 ft. Freeboard</i> _____</p> </div> <p style="text-align: center;"><u>HEIGHT \times STORAGE CHECK</u></p> <p>H = Aux. Spwy. Elev. - Low Elev. on \mathcal{C}_L _____ ft. $V_p = 0.4 \times$ _____ ac. perm. Pool \times _____ ft. water depth _____ ac.ft. $S = V_p + V_{sp}$ _____ ac.ft. Product = H \times S _____ Overall Height = Settled Fill Elev. - Low Elev. @ Downstream Toe _____ ft.</p>	Auxiliary Spillway Elevation _____			Auxiliary Spillway Flow Depth, H_p (Check One):			H_p (ft.)	Q_a (cfs/ft.)	Max. Exit Slope (%)	_____ 1.0	_____ 2	_____ 12	_____ 1.3	_____ 3	_____ 10	_____ 1.5	_____ 4	_____ 6
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PRINCIPAL SPILLWAY DESIGN

Inlet Elevation _____	_____
Pipe Diameter _____ in.	_____ in.
Kind of Pipe (Check One): CMP _____ WSP _____ Smooth Plastic _____	
Length of Pipe _____ ft.	_____ ft.
Head _____ ft.	_____ ft.
Q_{op} (MO-3-13 to 20, EFH) _____ cfs	_____ cfs
$Q_{op} \div$ D.A. _____ cfs/ac	_____ cfs/ac
V_s (MO-11-3, EFH) _____ ft.	_____ ft.
$V_{sp} = V_s \times$ D.A. _____ ac.ft.	_____ ac.ft.
Stage: Prin. to Auxiliary _____ ft.	_____ ft.
(From reverse side)	
Min. Stage for Full Pipe Flow _____ ft.	_____ ft.
(MO-3-10 to 12, EFH)	
Stage Used _____ ft.	_____ ft.

GLOSSARY

D.A.: Drainage area.
 H: Effective fill height.
 H_p : Design flow depth through aux. spwy.
 Q_i : Peak rate of runoff from design storm.
 Q_0 : Discharge from aux. spwy. floodrouting.
 Q_{0a} : Aux. spwy. discharge.
 Q_{0p} : Prin. spwy. discharge.
 Q_a : Aux. Spwy. discharge per foot of bottom width.

S: Total vol. of storage below aux. spwy.
 V_p : Vol. of storage below prin. spwy.
 V_r : Vol. of runoff.
 V_{ra} : Vol. of runoff from aux. spwy. storm.
 V_s : Vol. of temporary storage: prin. to aux. crest.
 V_{sa} : Vol. of temporary storage: prin. to aux. spwy.
 V_{sp} : Vol. of temporary storage: prin. to aux. spwy. crest.

*Use limited to Class (a) dams and drainage areas of 250 acres or less.

